MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 2, 2018/2019

BFN3304 – FINANCIAL AND VALUATION MODELLING

(All sections / Groups)

4 MARCH 2019
9.00 a.m. - 11.00 a.m.
(2 Hours)

INSTRUCTIONS TO STUDENTS

1. This question paper consists of **12** pages.
2. Answer **ALL FOUR** questions in **FOUR SEPARATE** Excel spreadsheets in **ONE SINGLE** Excel file.
3. Your Excel file should be named with your **STUDENT ID**, followed by your **NAME**, for example: **1111111623_HISHAM.xls**
4. **SAVE** your answers for all questions in the provided **THUMB-DRIVE.**
5. Please also copy your answers together with formulas onto the given templates of Excel spreadsheets in the **APPENDIX.**
6. Mark distributions are shown in the given templates.

Using the templates provided in the Appendix of this question paper to model the following 4 questions in the Microsoft Excel:

QUESTION 1 (25 MARKS)

You have decided to invest in a small commercial office building that has one tenant. The tenant has a lease that calls for annual rent payments of RM100,000 per year for the next three years. However, after that lease expires, you expect to be able to increase the rent by 5% per year for the next seven years. You plan to sell the building for RM1,000,000 ten years from now.

a. Create a table showing the projected cash flows for this investment if the next lease payment will be made in one year.

(10 marks)

b. If you need to earn 10% per year on this investment, what is the maximum price that you would be willing to pay for the building today? Use the net present value (NPV) function.

(10 marks)

c. Suppose that the current owner of the building is asking RM400,000 for the building. If you paid this price, what annual rate of return would you earn? Should you buy the building at this price?

(5 marks)

QUESTION 2 (25 MARKS)

Robin Company has a dividend payout ratio of 50%. Next year, it will earn RM5 per share and have a return on equity (ROE) of 15%. The shareholders' required return is 12%.

a. Calculate the company's growth rate of earning per share (EPS).

(4 marks)

b. Using the earning model, what is the value of the stock?

(12 marks)

c. Using the constant-growth dividend discount model, what is the value of the stock?

(4 marks)

d. Construct a data table that shows how the growth rate and value of the stock will change if ROE ranges between 10% and 20%, in 1% increments. Now, using that data, create a scatter chart to show the relationship between the value of the stock and the ROE. Is the relationship linear? At what point does the model break down?

(5 marks)

Continued...

QUESTION 3 (25 MARKS)

Lala seafoods is considering replacing a five-year-old machine that originally cost RM65,000. It was being depreciated using straight-line to an expected salvage value of zero over its original 10-year life, and could now be sold for RM30,000. The replacement machine would cost RM150,000 and have a five-year respected life. It would be depreciated using straight-line method. The actual expected salvage value of this machine after 5 years is RM20,000. The new machine is expected to operate much more efficiently, saving RM20,000 per year in energy costs. In addition, it will eliminate one salaried position saving another RM65,000 annually. The firm's marginal tax rate is 35% and the weighted average cost of capital (WACC) is 10%. For the replacement project, calculate the following:

a. Calculate after-tax cash flows of the project from year 0 to year 5.

(10 marks)

b. Calculate net present value (NPV), internal rate of return (IRR) and modified internal rate of return (MIRR) of the replacement project. Should the project be accepted?

(15 marks)

QUESTION 4 (25 MARKS)

You are considering an investment in the bonds of Trump Real Estate. The bonds pay interest semiannually, will mature in 10 years, and have a coupon rate of 6% on a face value of RM1,000. Currently, the bonds are selling for RM960.

a. If your required return is 8% for bonds in this risk class, what is the highest price you would be willing to pay? (Use the PV function) **(5 marks)**

b. What is the current yield of these bonds? **(5 marks)**

c. What is the yield to maturity on these bonds if you purchase them at the current price? (Use RATE function.) **(5 marks)**

d. If you hold the bonds for one year, and interest rates do not change, what total rate of return will you earn, assuming that you pay the market price? Why is this different from the current yield and yield to maturity (YTM)? **(5 marks)**

e. Run a sensitivity analysis for the highest price of this bond computed in (a), if the required return ranges from 1% to 15%. **(5 marks)**

End of Page

APPENDIX: TEMPLATES FOR ALL QUESTIONS

The given templates in this Appendix are:

1. to be followed exactly when carrying out your modeling in the Microsoft Excel for all of the four given questions.

2. to be used to record answers produced in your Excel spreadsheets for all of the four given questions as follows:

   - Each resulted value should be recorded on the correct cell as it appears on your actual excel spreadsheet in the Microsoft Excel.

   - Formula for each recorded value should be recorded in the 'Excel Formula' column.

   - Formulas for more than one columns can be entered in one single excel cell under the Excel-Formula column and spaced from one another with a slash sign "/".

ANSWER FOR QUESTION 1 (25 MARKS):

	A	B	
1	**INPUT ZONE**		
2	Growth Rate		
3	Required Return		
4	Year 1 Rent		
5	Years Stable Rent		
6	Years Growing Rent		
7	Year Sold		
8	Sale Price in 10 Years		
9	Ask Price Today		
10			

ANSWER FOR QUESTION 1 (25 MARKS) (CONTINUED…):

	A	B	C	D	E
11	MODELLING ZONE				
12	A.	[redacted]	[redacted]	[redacted]	
13		0			(2 marks)
14		1			(2 marks)
15		2			
16		3			
17		4			(2 marks)
18		5			
19		6			
20		7			
21		8			
22		9			
23		10			(2 marks)
24					
25	B.	Present Value			(2 marks)
26					
27					
28		PV First 3 Years			(4 marks)
29		PV Next 7 Years			(4 marks)
30		PV Lump Sum			(3 marks)
31		Total PV			(1 marks)
32					
33	C.	Yield			(3 marks)

ANSWER FOR QUESTION 2 (25 MARKS):

	A	B	C	D
1	**INPUT ZONE**			
2	EPS			
3	Payout Ratio			
4	ROE			
5	Required Return			
6				
7	**MODELLING ZONE**		**EXCEL FORMULA**	
8	**A.**			
9	Growth Rate			**(4 marks)**
10	**B.**			
11	Value without Growth			**(4 marks)**
12	Value of Growth Opportunities			**(4 marks)**
13	Value of Stock			**(4 marks)**
14	**C.**			
15	Constant Growth DDM Value			**(4 marks)**
16				

ANSWER FOR QUESTION 2 (25 MARKS) (CONTINUED...):

	A	B	C	D
17	**D.**			
18	**ROE**	**VALUE**	**EXCEL FORMULA**	
19				**(1.5 marks)**
20	10%			**(1.5 marks)**
21	11%			
22	12%			
23	13%			
24	14%			
25	15%			
26	16%			
27	17%			
28	18%			
29	19%			
30	20%			
31				
32	Chart to be created in the excel file			**(2 marks)**

ANSWER FOR QUESTION 3 (25 MARKS):

	A	B	C	D	E	F	G	H	I
1	INPUT ZONE								
2		Old	New					Excel Formula	
3	Cost								
4	Salvage for Depreciation								
5	Current Salvage Value								
6	Actual Expected Salvage								
7	Original Life								
8	Remaining Life								
9	Depreciation Method								
10	Depreciable Life								(1 marks)
11	Current Book Value								(1 marks)
12	Energy Savings								
13	Salary Savings								
14	Tax Rate								
15	WACC								
16									

ANSWER FOR QUESTION 3 (25 MARKS) (CONTINUED...):

	A	B	C	D	E	F	G	H	I
16									
17		Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Excel Formula	
18	Revenue								
19	Expenses								(1 marks)
20	Depreciation								(1 marks)
21	Pre-Tax Operating Income								(1 marks)
22	Taxes								(1 marks)
23	Add: Depreciation								(1 marks)
24	After-tax Operating Cash Flow								(1 marks)
25	Terminal Cash Flow								(1 marks)
26	Total After-tax Cash Flow								(1 marks)
27									
28	Net Present Value								(5 marks)
29	Internal Rate of Return								(5 marks)
30	Modified Internal Rate of Return								(5 marks)
31									
32									

ANSWER FOR QUESTION 4 (25 MARKS):

	A	B	C	
1	INPUT ZONE			
2	TRUMP REAL ESTATE			
3	Market Price of the bond (RM)			
4	Face Value (RM)			
5	Coupon Rate			
6	Frequency			
7	Maturity (Years)			
8	Required Return			
9				
10	MODELLING ZONE		EXCEL FORMULA	
11	the highest price of the bond that you wil be willing to pay (RM)			(5 Marks)
12	Current Yield			(5 Marks)
13	One Year Total Return			(5 Marks)
14	Yield to Maturity			(5 Marks)
15				

ANSWER FOR QUESTION 4 (25 MARKS) (CONTINUED...):

	A	B	C	
16	SENSITIVITY ANALYSIS			
17				
18	Required Return	The highest price of the bond	EXCEL FORMULA	
19				[2.5 Marks]
20	1.00%			[2.5 Marks]
21	2.00%			
22	3.00%			
23	4.00%			
24	5.00%			
25	6.00%			
26	7.00%			
27	8.00%			
28	9.00%			
29	10.00%			
30	11.00%			
31	12.00%			
32	13.00%			
33	14.00%			
34	15.00%			